

80GHz Radar Level Transmitter

RLT6401-C



FMCW 80GHz Radar



Response time: < 2s



With integrated display option



Protection level: IP67

**Product
Datasheet**

ROCKSENSOR AT A GLANCE (ABOUT US)

Rocksensor is one of the global leaders specializing in Process Instrumentation, Research and Development and Designing of Industrial Automation Equipment. We provide highly precise pressure sensors and transmitters, flow metres, level transmitters and temperature transmitters with a prime focus to help our clients efficiently, safely and economically run complex industrial processes.

Rocksensor, headquartered in Switzerland, has its footprint in various geographical regions such as the US, Russia, South Korea, Italy, Germany, Singapore, Malaysia, Morocco, China, Taiwan, Australia, UAE, Brazil and India. Our clients come from some of the major industries such as Oil and Gas, Petrochemicals, Pharmaceuticals, FMCG, Automobiles, Water, Cement, Metal & Mining, and mainly from the Power Industry like Nuclear, Thermal, Hydro, and Solar.

Rocksensor deals in a wide range of highly accurate industrial automation instruments ensuring that even the complex industrial processes happen efficiently.

To fulfill the needs of our clients we make sure that our instruments work in even the harsh environmental conditions offering accurate recordings and communication.

We, at Rocksensor, believe in creating bonds that last a lifetime and create a success story for each and every client. Rocksensor aims to achieve a perfect fit in the global market landscape and establish our footprints across the globe.



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1. Typical application

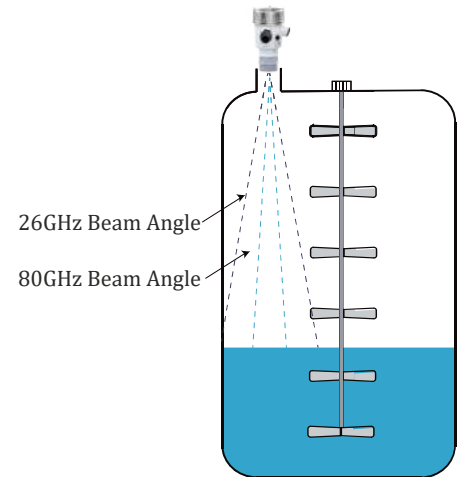
Continuous level measurement of aggressive liquids with lower demands on pressure and temperature ranges. It's particularly suitable for applications with small mounting space.

2. Advantages and features

- Isolated emitting and receiving signal enable full range measurement without dead zone. Unaffected by buildup near sensor.
- Real time self-monitoring on voltage, current and chip. Output warning when abnormality present.

3. Measuring principle

The radar uses 80GHz Frequency Modulated Continuous Wave. The FMCW radar emits a high frequency signal whose frequency increases linearly during the measurement phase (called the frequency sweep). The signal is emitted, reflected from the measuring surface and received with a time delay, (t). Delay time, $t=2d/c$, where (d) is the distance to the product surface and (c) is the speed of light in the gas above the product. For further signal processing the difference Δf is calculated from the actual transmit frequency and the receive frequency. The difference is directly proportional to the distance.



4. Technical data

Parameters	Details
Measuring range	0 ~ 35m
Power	< 0.5 W
Response time	< 2s
Resolution	1mm
Wetted parts materials	Process fittings: PP; Antenna: PVDF; Seal: PP; PTFE
Repeatability	±1 mm
Frequency	76~81GHz
Process fitting and beam angle	Thread G1½ - Beam angle <1°; Mounting strap - Beam angle <1°
Process temperature	(-)40°C ~ 200°C
Process pressure	-1bar ~ 3bar
Protect level	IP67
Accuracy	±2mm
Signal output	4 ~ 20mA/ HART
Display and Adjustment	Tank side display, Software (MODBUS RS485), smartphone
Electrical connection	2×M20*1.5 (Cable diameter 9 ~ 13 mm) ½NPT
Ex information	Ex ia IIC T6 Ga

5. Model Selection Table

RLT6401-C		80GHz Compact Radar Level Transmitter									
Code		1	2	3	4	5	6	7	8	9	10
Language											
English	A										
Approval											
Standard	XX										
Ex ia IIC T6 Ga	CX										
Antenna version/ Material											
Compact antenna PVDF	A										
Process Fitting											
Thread G1½	TG										
Thread G3	TH										
Flange DN50	FC										
Flange DN80	FD										
Flange DN100	FE										
Flange DN150	FK										
Flange ASME 2"	AM										
Flange ASME 3"	AN										
Flange ASME 4"	AP										
Flange ASME 6"	AR										
Customized	TT										
Cable Entry											
M20x1.5	M										
½NPT	N										
Housing/ Protection											
Single chamber/ Plastic / IP67	A										
Flange Material											
A	Without flange										
B	304										
C	316										
D	316L										
E	PTFE										
F	PVC										
G	PP										
T	Customized										
Sealing Material/ Temperature/Pressure											
M	FKM/-40 ~ +130°C/ -1~3bar										
N	FKM/-40 ~ +200°C/ -1~3bar										
O	EPDM/-40 ~ +130°C/ -1~3bar										
X	KALREZ 6230/ -15 ~ +130°C/ -1~3bar										
Z	KALREZ 6375/ -20 ~ +130°C/ -1~3bar										
T	Customized										
LCD Display/Bluetooth											
X	Without LCD display/Without Bluetooth										
A	With LCD display/Without Bluetooth										
B	Without LCD display/With Bluetooth										
C	With LCD display/With Bluetooth										
Electronics											
H	Two-wire 4~20mA/ HART; 24 VDC										
A	Two-wire 4~20mA/ HART; 24 VDC; Bluetooth										
T	Customized										

Example: RLT6401-C-AXXTGMHBCCTTZ

RLT6401-C - Radar Level Transmitter

A - Language : English

XX - Approval : Standard

TG - Process Fitting : Thread G1½

M - Cable Entry : M20x1.5

H - Electronics : Two-wire 4~20mA/HART; 24 VDC

B - Flange Material : 304

C - LCD Display/Bluetooth : With LCD display/With Bluetooth

TT - Process Fitting : Customized

Z - Sealing Material/ Temp./ Pressure : KALREZ 6375/-20~+130°C/-1~3bar

*For any customisation, contact our sales team

Field Instrumentation Range



Pressure Measurement

- Smart Differential Pressure Transmitter
- Smart Gauge Pressure Transmitter
- Smart Absolute Pressure Transmitter
- Miniature Pressure Transducer without display
- Sanitary Gauge/ Absolute Pressure Transmitter

- Submersible Pressure Transmitter
- Remote Seal Differential P.T. with capillary
- Remote Seal Differential P.T. Direct Mount
- Remote Seal Gauge/Absolute P.T. with capillary
- Remote Seal Gauge/Absolute P.T. Direct Mount



Flow Measurement

- Coriolis Mass Flowmeter
- Thermal Gas Mass Flowmeter
- Positive Displacement Flowmeter
- Electromagnetic Flowmeter
- Vortex Flowmeter

- Turbine Flowmeter
- Variable Area Flowmeter
- Clamp On Ultrasonic Flowmeter
- Inline Ultrasonic Flowmeter
- Portable Ultrasonic Flowmeter



Level Measurement

- RADAR Level Transmitter Horn Antenna
- Compact RADAR Level Transmitter
- RADAR Level Transmitter Sanitary
- RADAR Level Transmitter
- Guided Wave RADAR Level Transmitter
- Guided Wave RADAR Level Transmitter
- RADAR Level Transmitter Lens Antenna

- RADAR Level Transmitter Rod Antenna
- Ultrasonic Level Transmitter
- Microwave Barrier Level Switch
- Admittance Level Switch Series
- Vibrating Rod Level Switch Series
- Tuning Fork Level Switch Series



Temperature Measurement

- Head Mount Temperature Transmitter
- Temperature Transmitter for Sanitary Applications

- DIN Rail Temperature Transmitter
- Field Mount Temperature Transmitter

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